

SYMBOL

Subwoofer And Center Channel

OWNER'S MANUAL

DESIGNED BY NEIL PATEL FOR AVALON ACOUSTICS



This product is certified to meet the requirements of the European Union (EU) Electromagnetic Compatibility (EMC) Directive (89/336/EEC). Because the permanent magnets attached to the loudspeaker drivers produce magnetic fields, it is recommended that the product not be positioned in very close proximity to computer monitors or television sets.



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1 Introduction

The Symbol MultiChannel System reflects our passion for creating loudspeakers that capture the imagination, and accurately reproduce the three-dimensional space of modern film soundtracks as well as discreet multi-channel musical recordings.

Drawing upon our many years of experience in loudspeaker research, design, listening, and manufacturing, and combining the most powerful tools of modern technology with master craftsmanship of the finest artisans, we have created an unsurpassed holistic system.

The Symbol Center Channel integrates with the Symbol front channels to form a smooth and uniform image. The Center Channel's vertical and horizontal dispersion eliminates many of the artifacts of a narrow polar response system that beams information from the loudspeakers as the program material pans through the various channels. The Symbol Subwoofer is engineered from the ground up to provide prodigious amounts of extremely fast articulate low frequency output (full power to 20 Hz). The amplifier is designed by Avalon MultiChannel Systems with power adequate for the task. This is the first multi-channel system designed holistically to create space with a phase coherent blending of the satellites, and is ready for improvements in digital storage as we approach a purely discrete six or more channel system.

www.avalonacoustics.com

2 Symbol Subwoofer

Introduction

Your Avalon MultiChannel Systems loudspeakers were shipped in heavily padded cardboard containers to ensure their safe arrival. It is recommended to save these containers for possible future use.

At least two people are required to lift the Subwoofer from the shipping container. The carton may also be placed on its side and the Subwoofer slid out on its back so as not to put pressure on the grille assembly.

Positioning

The Symbol Subwoofer was designed to be placed beneath a projection screen (with Center Channel attached). The cabinet may however be placed at the center rear or sides of the room, depending on room limitations. It is inadvisable to place the Subwoofer in the corners of a room unless the surround sound processor has sophisticated filter topologies capable of compensating for the inherent room loading problems associated with corner placement.

Connections

AC INPUT: The input voltage has been factory preset for the Country of destination. Connect a standard IEC power cord (not supplied for International use due to varying plug configurations). Current transfer is essential for tight control of the drivers; it is advisable that an AC connection commensurate with a high-powered amplifier be used.

Signal Input

Left and right balanced and single-ended inputs are provided. Most 5.1 surround sound processors provide a single subwoofer output connection. This may be either single ended or balanced. Only ONE (left or right) of these connections needs to be utilized for proper performance. Certain sophisticated installations may contain stereo subwoofer output capabilities (e.g. when using a high-end stereo preamplifier to drive a two-channel system). In such cases, both left and right inputs of The Symbol Subwoofer should be utilized. If single-ended connections are used, the supplied XLR dummy plugs should be installed in order to reduce air leakage. If a single balanced input is used, a dummy XLR connector should fill the remaining balanced input port. ALL CONNECTIONS SHOULD BE MADE BEFORE TURNING THE UNIT ON!

Controls

Once all connections have been made, the unit is powered up with the large rocker switch at the bottom center of the amplifier panel. Upon initial power up a transient "pop" may be heard as the unit charges; this is normal. There are no user serviceable parts behind the amplifier panel.

After power up the digital display signifying the master gain setting will initialize and display the previously stored settings (see below). The gain range is variable in (.5) step increments from (45-90). Most optimal setups will fall into a range below (70) and greater than (65). Master gain adjustments are made by pressing either the INCREASE or DECREASE buttons.

If you would like to **MUTE** the Subwoofer, depress the **INCREASE** and **DECREASE** buttons **SIMULTANEOUSLY** (this function should be utilized unless the unit is to be disconnected). This will initiate a two-step process. The first step saves the current master gain setting and the state of the low frequency filters (**CONTOUR** and **MODE** settings). This process is confirmed by a series of four dashes (----) shown on the numeric display. The unit will then proceed to enter the standby mode. To "wake up" or reactivate the unit, depress the **MODE** button. This will cause the previously stored values to be recalled and the unit will be returned to an operational state.

If the mains power is interrupted by either an actuation of the mains power switch or from an interruption of the mains power itself, upon reapplication of the mains power, the unit will initiate its recall sequence and return the unit to the previously saved state (see above). The single mains fuse should be replaced by one of equal value if there is a failure. Any service beyond the replacement of the AC mains fuse should be referred to an authorized Avalon MultiChannel Systems representative.

3 Center Channel

Mounting

1. For mounting to Symbol Subwoofer, remove four black bolts from top surface of subwoofer cabinet.
2. Locate Center Channel / Mounting Bracket assembly over the four mounting holes as shown in Figure 3.1. DO NOT DISASSEMBLE CENTER CHANNEL FROM BRACKET.
3. Tighten four black bolts with 5/32 Allen wrench until snug.
4. Connect Center Channel wiring via rear terminals. BE SURE TO OBSERVE PROPER POLARITY (+ / -).

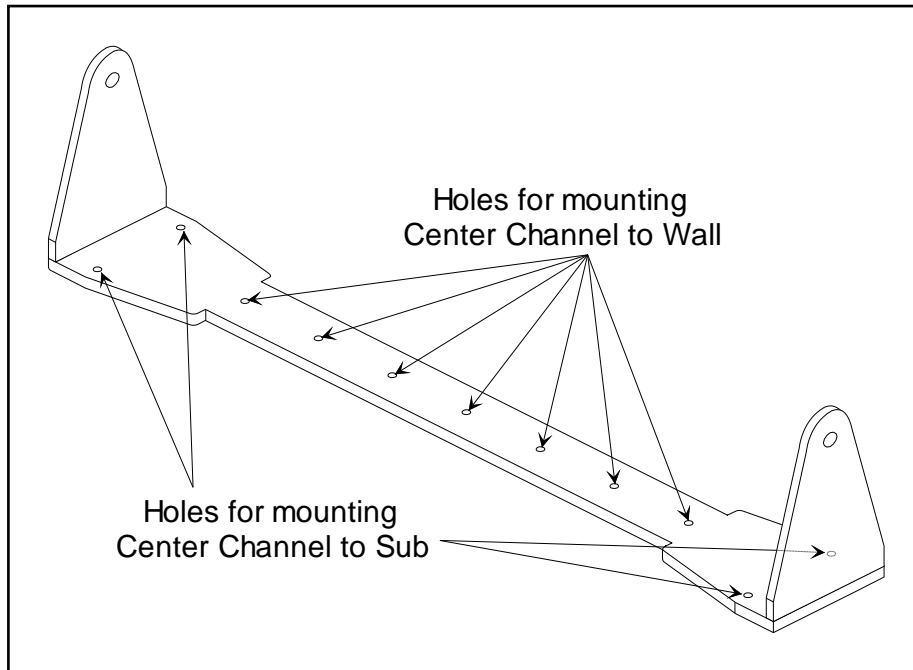


Figure 3.1 – Center Channel mounting holes

Adjustment

1. Both large black knobs must be loosened in order to tilt the Center Channel up or down. NOTE: When the pressure bearing has been loosened the Center Channel will tend to remain in its previously locked position. It may be necessary to apply pressure in order to tilt the Center Channel to a new position.
2. After adjustment of Center Channel position, make sure both knobs are snugly tightened.
3. Proper tilt is necessary for the full integration of the Center Channel with left and right speakers. The optimum position will depend on both the electronics being used and room acoustics. NOTE: Since the Center Channel has an open vertical dispersion, the angle of optimal tilt may be greater than might be apparent visually.
4. The Center Channel MUST BE played with the tweeter grilles in place, however the central woofer grille may be removed.

4 Low Frequency Fine Tuning

The Symbol Subwoofer will produce prodigious quantities of low frequency energy with accurate phase and transient response. Any thickness or overhang in the low frequency presentation will be easily discernable and is the direct result of improper setup. The following guidelines should be regarded as a sound starting point; those who have extensive experience in sophisticated low frequency tuning may improvise beyond these rules of thumb.

Placement

For best phase alignment the Center/Subwoofer combination should be at the same plane as the Symbol Satellites. Since this is the case, the Subwoofer will optimally be placed a few feet from the wall on which the video will be displayed, centered from left to right between the Symbol Satellites. Any deviation from this configuration should be re-aligned through compensation within your surround sound processor. Most processors will have easily adjustable "distance to listener" parameters. Once a final position has been determined, the included spikes should be installed, leveled and locked in place with the supplied spike nut.

Any low frequency acoustic transducer will produce non-uniform loading when in close proximity to a boundary layer, such as a wall. Full output at low frequencies and accurate transient response will exacerbate this effect. For this reason it is strongly recommended that a DAAD4 acoustic device (more information is available at www.acusticaapplicata.com), be placed between the Subwoofer and wall horizontally on the floor. Absorption of this energy buildup will reveal much of the true transient characteristics of the system.

Surround Sound Processor Tuning

Most sophisticated SSP chipsets allow flexible bass management. Usually flexible crossover points between sub and satellites are matched with second order filter slopes. In such cases the crossover point should be set at approximately 60 Hz (+/- 5 Hz), with both the Subwoofer and Symbol satellites being actively crossed. The Symbol Subwoofer should ALWAYS be set to the HIFI MODE under these circumstances. Overall satellite to Subwoofer volume balance should then be adjusted for optimal results. Usually the appropriate Subwoofer gain setting will fall between 65 and 70 on the digital display. Matching the "speed" between satellites and Subwoofer is critical. Miniscule changes in Subwoofer gain will result in significant differences in overall presentation, and should be fine tuned through SSP subwoofer gain settings.

Only when any thickness or overhang has been eliminated in the 60 Hz-120 Hz region by careful gain adjustment, will the system perform as designed.

MODE SETTINGS

There are two mode settings: THEATER and HIFI. Depressing the MODE button toggles between the two settings. The appropriate LED will be illuminated, signifying the mode in use. See Figure 4.1.

HIFI MODE This setting should be utilized in the vast majority of installations during music playback, or when transient speed is preferable to overall bass impact. In HIFI mode the high frequency roll off closely approximates the low frequency roll off of the Symbol satellites. Optimum surround sound processor low frequency management should still be utilized (see optimization section).

THEATER MODE Access to three different bass contour modes that have been tailored for optimum results when viewing modern film content are available under this setting. The selection of which contour setting to use will depend upon your particular room environment, placement of subwoofer, and personal preference as to low frequency presentation. A boost mode may also be selected for each different program being viewed, depending upon the amount of bass impact desired.

CONTOUR

There are three selectable CONTOUR settings, NORMAL, BOOST 1, and BOOST 2. Depressing the CONTOUR button toggles between these three settings. No LED is illuminated when in the NORMAL contour mode. This setting denotes the flattest frequency response, but certainly is not dictated as the optimal setting. BOOST 1 and BOOST 2 settings both add energy at extremely low bass frequencies (below 38 Hz), while also changing the relative shape of the bass response curve. Once again, any of these selections may be applicable in your set-up, and a little experimentation will be necessary. Each of the two modes, HIFI and THEATER, utilize their own independent family of three selections, with each family of curves being optimized for best results.

CONNECTIONS

Balanced cables will invariably produce a more accurate low frequency presentation. Be sure to use high quality audio cables for optimum results; this also applies to AC connections.

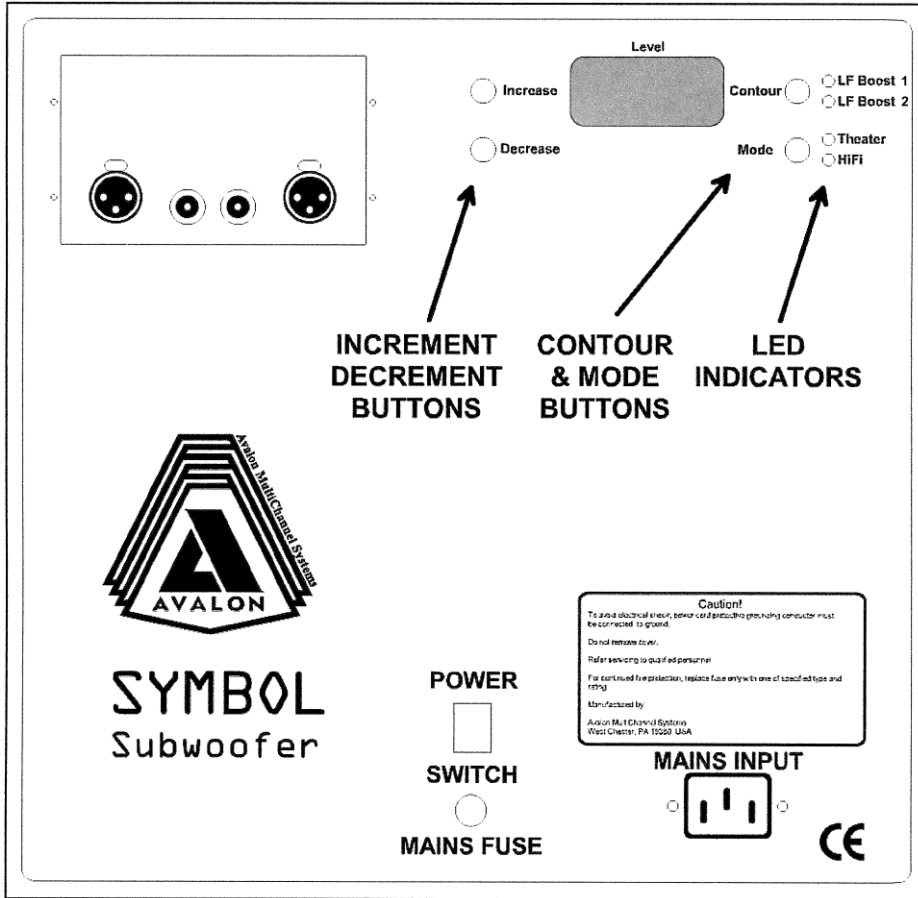


Figure 4.1 – Subwoofer Amplifier Controls

5 Maximize MultiChannel Performance

These details are imperative to obtaining optimum results from your AVALON MUTLICHANNEL SYSTEMS loudspeakers.

Break-in

The break-in period is critical to maximizing sonic performance and should take place before other adjustments (see the discussion on page 14). The break-in should begin with three to six hours of quiet music, followed by 100 to 150 hours of loud and dynamic source material.

Grille Assemblies

The grille assemblies, with their felt anti-diffraction masks, are integral elements of the loudspeakers' design. Unlike many other products, Avalon MultiChannel Systems loudspeakers are designed to be used with the grilles in place while listening, and removing them will degrade the system's performance. It is extremely important that the felt anti-diffraction masks make physical contact with the face of the loudspeakers, as air space between the felt and the speaker face will adversely affect sound quality.

Speaker Placement and Symmetry

Selecting the proper room position for your Avalon MultiChannel Systems loudspeakers can dramatically improve their performance. The following points highlight the fundamental concepts in loudspeaker positioning:

- Left to right room symmetry aids in producing a balanced sound stage.
- Image depth is enhanced when the distance to the rear wall is increased.
- The most even bass response will be attained when the distances to the side and rear walls are not overly similar.

The Symbol MultiChannel System, being designed for maximum resolution, is intentionally not shielded. Therefore care must be exercised when placing the loudspeakers in close proximity to a direct view television. Generally allowing a minimum clearance of 30" will not only eliminate any magnetic interference, but will also improve sonics by minimizing hard reflections from the television surface. If your system configuration does not allow these minimum clearances, shielded drivers are available as an option. Please contact your dealer for details.

Toe-In

Adjusting the toe-in angle of the speakers is useful in tailoring the sound to best match the characteristics of your system and listening room. When the speakers are facing straight forward, they tend to create a large, expansive sound-stage, painted with broad brush strokes. As they are rotated toward the listening position, the image becomes more compact, with increased focus, creating a greater sense of intimacy.

Start with the loudspeakers facing straight forward, and play either a mono source, or a stereo source with a distinct center image, through both channels. Carefully rotate the loudspeakers inward in small increments to bring the image in precise center focus. Toe-in adjustment is rather delicate, and experimentation is necessary to achieve the proper angle for your listening situation. The optimum angle is usually between three and ten degrees inward.

Mounting Feet Spikes

Supplied with your Avalon MultiChannel Systems loudspeakers are mounting feet with spikes, used to couple the speakers to the floor, thereby minimizing time-smearing resonance effects. The result is an increase in focus and solidity of the sonic images.

On hardwood floors, you may protect the floor from the pointed spike using a large coin, such as a quarter. However, the coupling effect of the spikes will be reduced.

Once you have located the proper position and toe-in angle for your Avalon MultiChannel Systems loudspeakers, install the spikes in the mounting feet.

First Reflection Points

Since the ear/brain system tends to integrate the sounds arriving within a 10 millisecond time window, it is important to control the early reflections arriving from the sidewalls to the listening position. A hard-surfaced wall can produce a strong frequency-dependent reflection that can interfere with the reproduced sound-stage, as well as change the perceived tonal balance of the system. Therefore, damping these first reflection points is strongly recommended.

Corner Treatment

It is important to control the first reflections of low frequency sound, which normally occur at the corners behind the loudspeakers. These reflections can cause significant distortions in phase and amplitude, resulting in muddy bass definition and smeared bass transients. Placing DAAD Bass Traps (more information is available at www.acusticaapplicata.com) in the room corners can significantly control these bass colorations and restore the quickness of bass transients.

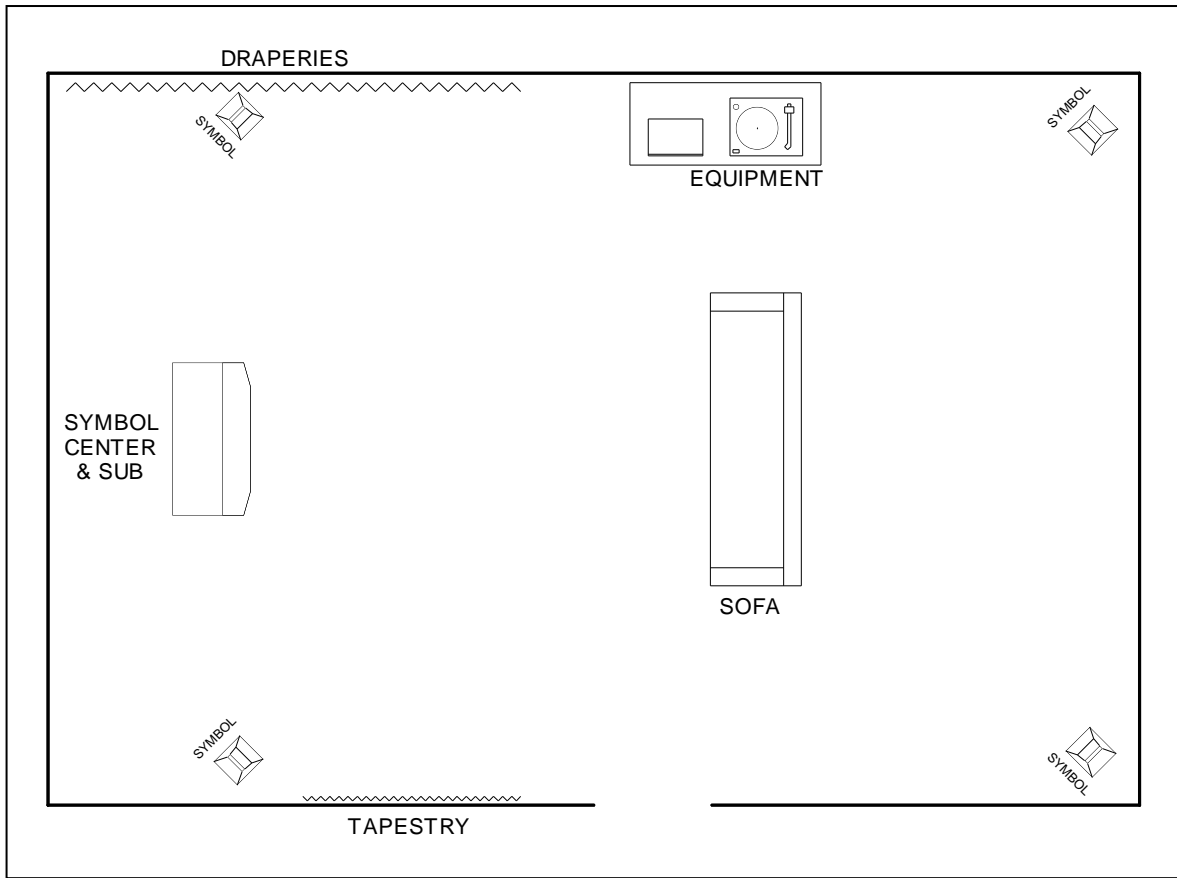


Figure 5.1 – Typical MultiChannel Room Set up

6 Break-in Period

Your new Avalon MultiChannel Systems loudspeakers have an initial break-in period. They will not perform to their full sonic potential when first installed in your system. This is partially due to a residual polarization of the dielectric materials used in the crossover capacitors and internal wiring.¹ As music is played through the loudspeakers, the electrical signal will gradually anneal these materials. Similarly, the suspensions of the drivers will reach their optimal mechanical properties as the speakers are played. Only after the break-in period will the full performance of your Avalon MultiChannel Systems loudspeakers be realized.

The break-in process will occur naturally as music is played through the system. To reduce the time required, it is recommended that the system be played continuously, using either a digital source in the repeat mode or an FM broadcast signal. The recommended break-in procedure is as follows:

- Initial warm-up: three to six hours of quiet music.
- Extended break-in: 100 to 150 hours of loud and dynamic source material (e.g. Tangerine Dream, Optical Race, RCA 2042-2-P).

During the break-in period, the sonic properties of your loudspeakers may undergo several gradual shifts as the various components break-in at different rates. It is therefore suggested that the fine-tuning of the system be delayed until after the break-in period is completed. However, during the final phases of the break-in period, the sonic image will open up, the sound-stage will gain specificity, the bass control and impact will increase, and the overall sound will have a more relaxed, involving presentation.

¹ A high-voltage test is applied to wiring and capacitors during their manufacture. This results in a residual polarization of the dielectric materials.

7 Care of Your Loudspeakers

Cabinet (Hardwood Finish)

Avalon MultiChannel Systems' hardwood finished loudspeakers are supplied with a durable, high quality furniture lacquer. Always use a clean, lint-free cloth to clean your cabinet, and be especially careful near the loudspeaker drivers, so as not to damage the diaphragms.

IMPORTANT: DO NOT use cleaners that contain ammonia, strong solvents, or abrasive materials. Use of these materials can degrade, scratch, or even DESTROY the finish.

Grille Assembly

The grille assembly may be removed from the cabinet and gently vacuumed to remove dust. If the felt insert is removed, please note the inside-outside orientation when re-installing it. The hole for the tweeter is beveled on the side toward the listener, to provide optimal dispersion characteristics.

Drivers

The drivers (woofers and tweeter) require no regular maintenance. Do not attempt to clean the tweeter domes, as they are easily damaged. If desired, you may remove dust from the woofer cone by using a small, soft dusting brush.

8 Warranty

Your Avalon MultiChannel Systems SYMBOL SERIES loudspeakers are warranted against defects in workmanship and materials for a period of two years from the date of first purchase to the original registered purchaser, provided that the enclosed registration card is returned to the factory within seven days of the purchase date. If the registration card is not returned within the seven-day period, this warranty is null and void, and you will not be notified of future updates. If you did not receive the registration card with your loudspeakers, please contact the factory immediately so that we may send you a replacement card. A complete statement of warranty is given below. Please take the time to fill out and return the enclosed warranty registration card.

IN THE EVENT OF A PROBLEM

In the unlikely event of a problem with your Avalon MultiChannel Systems loudspeakers, have your dealer contact Avalon MultiChannel Systems. All warranty claims must be made through an authorized Avalon MultiChannel Systems dealer or distributor.

WARRANTY STATEMENT

1. Avalon MultiChannel Systems warrants the materials, workmanship, and proper functioning of this product for a period of two years from the date of first purchase to the original registered purchaser, provided that the completed registration card is returned to Avalon MultiChannel Systems within seven days of the date of purchase. If the registration card is not returned to the factory within the seven-day period, this warranty is null and void. If any defects are found in the materials or workmanship of this Avalon MultiChannel Systems product, or if the product ceases to properly function within the appropriate warranty period from the date of first purchase, the unit will be repaired or replaced by Avalon MultiChannel Systems or its authorized agent after receiving authorization from the factory or dealer. This warranty is not transferable.

Unauthorized dismantling of this product will render this warranty void.

2. Purchaser must obtain an RMA number by contacting dealer/distributor and return the product, packaged in the original shipping carton, freight prepaid. Shipping address will be provided at the time the RMA number is issued. No returns will be accepted without prior authorization.

3. Avalon MultiChannel Systems reserves the right to inspect any products which are the subject of warranty claim prior to repair or replacement. Final determination of warranty coverage lies solely with Avalon MultiChannel Systems and only products which are determined to be covered under this warranty shall be repaired or replaced by Avalon MultiChannel Systems. The customer will be informed of any delays and Avalon MultiChannel Systems will provide replacement as quickly as possible. Out-of-warranty claims will be billed for labor, materials, return freight, and insurance as required. Any product for which a warranty claim is accepted will be returned to the purchaser and cost of return shipping and insurance will be factory prepaid within the boundaries of the USA. Units to be shipped outside of the USA will be shipped freight collect only. This warranty gives specific legal rights. The purchaser also has implied warranty rights, and may also have other rights which vary from state to state.

4. This warranty is extended to the original registered purchaser for value.

5. Avalon MultiChannel Systems strives to manufacture the very finest possible equipment, and therefore reserves the right to make changes in design and improvements upon its products, without necessarily assuming an obligation to retrofit such changes upon its previously manufactured models.

6. The above warranty is the sole warranty given by Avalon MultiChannel Systems, and is in lieu of all other warranties. All implied warranties, including warranties of merchantability or fitness for any particular purpose shall be strictly limited in duration to two years from the date of original purchase, and upon the expiration of the warranty period (two years), Avalon MultiChannel Systems shall have no further obligation of any kind whether express or implied, including but not limited to merchantability. Further, Avalon MultiChannel Systems shall in no event be obligated for any incidental or consequential damages as a result of any defect or any warranty claim, whether express or implied. Some states do not allow exclusion or limitation of incidental or consequential damages or limitations on how long implied warranties last, so the above limitations and exclusions may not apply to you.

7. Avalon MultiChannel Systems does not authorize any third party, including any dealer or sales representative to assume any liability for Avalon MultiChannel Systems, or make any warranty for Avalon MultiChannel Systems. The unit must not have been altered or improperly serviced or repaired. The serial number on the unit must not have been altered or removed.

8. Warranty registration cards must be completed and mailed to Avalon MultiChannel Systems within seven days of date of purchase; otherwise, this warranty is null and void. Avalon MultiChannel Systems may, at its option, require from the purchaser valid proof of purchase.

9. If this product is used in a commercial or industrial application, then special warranty exclusions may apply. Contact your dealer or Avalon MultiChannel Systems for commercial warranty policies.

9 Features

- Advanced light weight driver diaphragm materials minimize energy storage and time-domain distortion.
- Smooth, wide polar response for superlative imaging capabilities.
- Moderate impedance characteristic allows for ideal interface with any amplifier.
- Crossover circuitry is hard-wired with surface-only conductors, eliminating deleterious sonic effects of printed-circuit boards.
- Oversize screw terminals.
- Careful crossover control of all magnetic field interaction.
- Acoustically-engineered grille assembly decreases edge diffraction effects.
- Distinctive pyramidal cabinet design provides optimal polar characteristics.

10 Specifications

Symbol Center Channel

Driver Complement	Two x 1" Proprietary Composite Tweeter Three x 5 1/4" Ceramic-coated Woofer
Sensitivity	87 dB
Impedance	4 ohms nominal
Frequency Response	45Hz to 24kHz
Dimensions	7" High (18 cm) 39" Wide (99 cm) 9" Deep (23 cm)
Weight	45 pounds (20 kg) Shipping: 52 pounds (24 kg)

Symbol Subwoofer

Driver Complement	(2) 12 inch high output woofers
Controls	Modes: HiFi, Theater Contour: 3dB Boost, -3dB Cut, Normal
Dimensions	18" high (46 cm) 39" wide (99 cm) 20" deep (51 cm)
Weight	154 pounds (70 kg) Shipping: 174 pounds (79 kg)
Amplifier	Power: 500 Watts at Load Inputs: RCA (2), XLR (2) Expansion: Open Architecture for Future Applications

11 Notes
